Laser **Equipment**

Product **Catalogue**

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MCE LASERS
Australian Laser Manufacturer

ABOUT **MCE LASERS**

MCE Lasers, based in Melbourne, Australia, has over the last 34 years developed a strong market niche for high precision laser systems used in alignment across a spectrum of industries. MCE Lasers continues to innovate laser systems for:

- Agriculture and land levelling
- Civic, building and construction
- Industrial alignment
- Mining and tunnelling
- Safety and monitoring
- Medical and therapeutic applications

With its Australian heritage, MCE Lasers has perfected its design, development and manufacture of precision laser alignment systems for harsh physical environments.

Now with a diverse product portfolio across a number of international industrial centres, the mission of MCE Lasers is to innovate laser technology to meet the precision alignment and levelling needs of industry. MCE Lasers has been proud to introduce easy-to-use high precision laser systems, and new applications for laser instruments, to the global market.

We retain a strong focus on research and development and draw on expertise across optoelectronics and RFID on a project basis. Technology advances in photonics, RFID and hardware offer a greater range of advances in the durability, robustness and instruments.

MCE Lasers maintains a large product range supported by a strong network of distributors across the globe, including Europe, Asia and the Americas. We strive to maintain and build the close relationship we have with our clients to determine their whole-of-project-life alignment needs, and seek to deliver a range of efficiencies and benefits with the one laser system.

MCE LASERS
Australian Laser Manufacturer

MCE Lasers mit Geschäftssitz in Melbourne, Australien, hat im Laufe der letzten 34 Jahre eine Marktnische für leistungsstarke Präzisionslasergeräte ausgebaut, die bei Ausrichtungsarbeiten in diversen Branchen Anwendung finden. MCE Lasers produziert innovative Lasersysteme für:

- Landwirtschaft und Landnivellierung
- Hoch- und Tiefbau
- Industrielle Trassierung
- Bergbau und Tunnelbau
- Sicherheit und Überwachung
- Medizinische und therapeutische Anwendungen

In Anbetracht seiner australischen Umgebung hat MCE Lasers Design, Entwicklung und Fertigung seiner Präzisionssysteme für Laserausrichtung in einer rauen Umwelt perfektioniert.

Mit einem vielfältigen Produktportfolio, das in diversen internationalen Industriezentren zum Einsatz kommt, hat MCE es sich zur Aufgabe gemacht, innovative Lasertechnologie zu entwickeln, um die Präzisionsausrichtungs- und –nivellierungsgeräte bereitzustellen, die die Branche benötigt. MCE Lasers hat seine benutzerfreundlichen Präzisionslasersysteme und neuen Anwendungen für Laserinstrumente stets mit Stolz auf dem Weltmarkt vorgestellt.

Unser Augenmerk bleibt jedoch weiterhin auf Forschung und Entwicklung gerichtet, und wir greifen dabei im Bedarfsfall auch auf Knowhow aus den Bereichen der optischen Elektronik und RFID zurück. Technische Fortschritte in Photonik, RFID und Hardware ermöglichen uns die Optimierung unserer Präzisionsinstrumente in Bezug auf Haltbarkeit, Robustheit und Anwendungsspektrum.

MCE Lasers hält ein breites Produktangebot bereit, das von einem leistungsstarken Vertriebsnetz rund um den Globus unterstützt wird, auch in Europa, Asien und allen Teilen Amerikas. Wir sind uns stets um Aufbau und Pflege enger Kundenbeziehungen bemüht. Wir ermitteln die Kundenanforderungen über einen gesamten Projektzyklus, um auf diese Weise mit einem einzigen Lasersystem eine ganze Reihe von Effizienzverbesserungen und Vorteilen bereitzustellen.

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Lasergrader

Product code: LS.230E / LS.230R.E / LS.230 / LS.230.R

The MCE Lasers Lasergrader is a premier dual or single grade laser with exceptional and user-proven performance. Designed and built in Australia, the Lasergrader comes with internal batteries, a full function remote control and user kit.

The Lasergrader full function remote control allows you to control the laser unit via a radio remote. The remote may be used to change grade control, give an optional grade display, and enter grade using arrow keys. All functions can now be executed without having to directly access the Lasergrader unit. At a glance the operator can see on the remote exactly what's happening, making work speedy and efficient.

FEATURES

- Lock function - when activated, all control keys on laser are locked.
- Optional grade display - select grade as a percentage or a ratio.
- Tough - robust, fully machined housing and all metal construction.
- Waterproof & dust-proof - fully sealed and pressurized with nitrogen. Allows you to work in all weather conditions.
- Elevation alert - if the laser is accidently moved, (with the lock function activated) the laser beam will stay switched off and stop rotating to alert the operator.
- Intelligent LCD readouts including service required, low battery warning, level and self-levelling limit.
- Two grade input systems - input the grade directly using the switch pad or in increments using the arrow keys.

MODELS AVAILABLE

LS.230E
Dual grade laser with internal battery

LS.230R.E
Dual grade laser with internal battery and radio remote control

LS.230
Dual grade laser with internal battery

LS.230.R
Dual grade laser with internal battery and radio remote control

APPLICATIONS

Earth Moving

Land Levelling

Agriculture

Road Construction

Landfill

Site Preparation

SPECIFICATIONS (LASER UNIT)

	LS.230E/ LS.230R.E	LS.230/ LS.230.R
Laser type	635 nm red laser diode	
Laser power	3 mW nominal	
Laser class	Class 2M	
Accuracy	± 10 arc seconds	
Grade range	-5% to +20%	
Self-levelling range	± 7.5%	± 10%
Working range	1.4 km diameter (tested with Laserguide sensor)	
Rotating head speed	200, 300, 400, 500 or 600 rpm	Continuously adjustable
External power source	12 - 24 V DC	
Battery type	Rechargeable Ni-Mh	
Battery operating time	30 hrs	
Charging input	12 - 24 V DC	
Charging time	12 hrs approximately	
Dimensions (H x W x D)	270 x 200 x 175 mm	
Operating temperature	-20º C to 50º C	
Weight	8.25 kg	7 kg

SPECIFICATIONS (REMOTE CONTROL)

	LS.230R.E	LS.230.R
Battery type	2 x 'AA' alkaline batteries	9 V battery
Operating range	700 m (conditions dependent)	
Dimensions	250 x 100 x 38 mm (including antenna)	200 x 95 x 63 mm (including antenna)
Weight	0.7 kg	0.6 kg

Lasergrader LS.230R.E

Lasergrader Economy

Product code: LC.G

FEATURES

- Two grade input systems - input the grade directly using the switch pad or in increments using the arrow keys.
- Grades in increments of 0.01% - allows for accurate work.
- Two grade display modes - display the grade either as a percentage or a ratio.
- Lock function - when activated, all control keys on laser are locked.
- Automatic warnings - warnings for service required, low battery, self-levelling limit, and level automatically displayed on the LCD.
- Elevation alert - if the laser is accidentally moved the laser beam will switch off and stop rotating to alert the operator.

SPECIFICATIONS

Laser type	Red visible laser diode
Laser class	Class 2M
Accuracy	± 20 arc seconds at 0.00% grade ± 80 arc seconds at all other grades
Self-levelling range	± 7.5%
Grade range	± 6.0%
Working range	200 m radius (350 m optional)
Rotating head speed	130, 330 or 530 RPM
Calibration	Can be done electronically on site.
Battery type	2 x D cell alkaline batteries
Battery operating time	20 hrs approximately
Dimensions (H x W x D)	220 x 155 x 155 mm (without handle) 220 x 200 x 155 mm (with handle)
Operating temperature	-20ºC to 50ºC
Weight	3.2 kg

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PIPELAYING **LASERS**

Pipeguide

Product code: LS.145.B / LS.145.G / LS.140.B / LS.140.G

SO ADVANCED IT'S ACTUALLY SIMPLE

We've remodelled the Pipeguide pipelaying laser to give you the brightest beam available, along with the most advanced features in the world.

FEATURES

- Impressive grade range (-20% to + 35%)
- Two grade input systems available
- Charging possible while laser in use
- Automatic warning if service is required
- Unique handle design which permits auto self levelling in cross axis when used on trivet plate
- Grade to ratio conversion
- Remote lock and height alert
- Remote control for out of trench adjustments
- Internal rechargeable battery
- Machined metal body

GRADE DISPLAY MODES

Percentage

Ratio

MODELS

LS.140.B
Red beam pipelaying laser with internal battery

LS.140.G
Green beam pipelaying laser with internal battery

LS.145.B
Red beam pipelaying laser with internal battery and 45° switch pad

LS.145.G
Green beam pipelaying laser with internal battery and 45° switch pad

SPECIFICATIONS

	LS.140.B/G	LS.145.B/G
Laser type	635 nm red laser diode or 532 nm green laser diode	
Laser power	3 mW nominal	
Laser class	Class 3R	
Grade range	-20% to +35%	
Grade range option	Any maximum 55% range	
Self-levelling range	-22% to +37%	
Line adjustment control	± 2.25 m @ 30 m	
Operating power source	Rechargeable battery or external power supply	
Battery type	Rechargeable Ni-Mh	
Input charging voltage	12 to 16 V DC	
Input charging current	1.0 Amp	
Charging time	6 hrs red beam 12 hrs green beam	
Polarity protection	Yes	
Operating time	20 hrs (10 hrs for LS.145.G)	
Design characteristics	Fully machined aluminium body	
Waterproof/fog-proof	Yes - purged with nitrogen	
Length	270 mm	282 mm
Diameter	140 mm	
Weight (with handle)	5 kg	

Pipeguide Economy

Product code: LS.140.E

The LS.140.E has been developed by MCE to provide an economical way to increase your productivity and accuracy when laying pipes. The remote line control allows easy second-day setup, while the full function remote control allows full control of the Pipeguide outside the trench.

FEATURES

- Easy set up
- Impressive grade range (-20% to + 35%)
- Liquid crystal display
- Grade/line lock function
- Compact, yet rugged
- Full function remote control

SPECIFICATIONS

Laser Unit	Laser type	635 nm red laser diode
	Laser power	3 mW nominal
	Laser class	Class 3R
	Grade range	-20% to +35% (or any 55% range)
	Self-levelling range	-22% to +37%
	Line adjustment	± 2.25 m @ 30 m
	External power source	12 - 16 V DC
	Polarity protection	Yes
	Dimensions	Length: 270 mm Diameter: 140 mm
	Weight	5 kg
Remote Control	Type	Corded remote control
	LCD display	Yes
	Controls	Grade and line
	Cord length	Laser to remote: 6 m Remote to power: 3.5 m
	Dimensions	280 x 115 x 70 mm
	Weight	2.5 kg (including cord)

Pipeguide Accessories

TARGETS

The targets for the Pipeguide range from those small enough to fit inside a 150 mm pipe to large adjustable models.

Fixed target 4" (100 mm)	A.140.004
Fixed target 6" (150 mm)	A.140.006
Fixed target 9" (225 mm)	A.140.009
Fixed target 12" (300 mm)	A.140.012
Universal target large with 3 inserts (red or blue)	A.140.022
Universal target small with 2 inserts (red or blue)	A.140.023
Red insert: small universal target, 5" or 9"	P.140.015
Red insert: large universal target, 8" or 11"	P.140.016
Green insert: large universal target, 8" or 11"	P.140.018
Blue insert: small universal target, 5" or 9"	P.140.019

TRIVET STAND

Sturdy and extremely robust, the trivet stand allows you to easily setup your Pipeguide on a stable height adjustable platform. Whether in front of a manhole or on solid ground.

Product code: A.140.005
A.140.001
A.140.002

BACK SUPPORT

The back support allows the Pipeguide to be setup on top of a standard 100mm or 150mm plastic sewer pipe, without slipping.

Product code: A.140.701
A.140.042

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LASER **LEVELS**

Rotec Laser Level

Product code: LS.RH / LS.RHV / LS.RHVG

The Rotec range of rotating lasers are compact, robust and packed full of features. The Rotec range are all fully automatic and self-level quickly and accurately every time. Three versions are available to suit all applications. MCE Lasers, Australia's only laser level manufacturer has listened to customers and acted to include features and accessories they want to see and added them as either standard or optional features to the Rotec range.

All lasers in the series are water and dust resistant and have an aluminum light house cover protecting the glass window and rotating head assembly against knocks and drops. A high impact housing making the complete series "site proof". With its high-powered laser output the laser can be used indoor for visual alignment on a target card or when teamed up with a laser receiver a range of 500 to 750 meter diameter can be achieved (depending on the receiver). All lasers are backed with a full warranty period giving the customer peace of mind.

LS.RH
Automatic horizontal self-levelling laser with manual mode, height of instrument (HI) alert and alkaline battery pack.

LS.RHV
Automatic horizontal/ vertical self-levelling laser with manual mode, dual plumb beams, HI alert and re-chargeable battery pack.

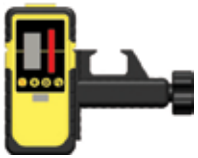
LS.RHVG
Green beam, automatic horizontal/ vertical self-levelling laser with manual mode, dual plumb beams, HI alert and re-chargeable battery pack.

APPLICATIONS

- Levelling: excavations, pouring concrete, suspended ceilings
- Transferring and checking heights: reference level marks
- Aligning: formwork, facades, drywall partitions, retaining walls
- Slopes: access ramps, car parks, drainage
- Transferring right angles, plumbing

HAND-HELD RECEIVERS

R.LAS.RH - standard receiver and clamp



R.LAS.RH.HD - Heavy duty laser receiver measures and displays the distance between the laser beam's hitting point and the marking notch. Upon power on the device automatically performs a self-calibration procedure, guaranteeing constistent accuracy.

SPECIFICATIONS

	LS.RH	LS.RHV	LS.RHVG
Operating distance	250 m (655 ft) radius or 350 m with upgraded receiver		250 m (655 ft) radius
Levelling accuracy	± 2.2 mm @ 30 m		
Levelling range	± 5%		
Laser source	650 nm visible laser diode (red)		560 nm visible laser diode, (green)
Laser class	Class 2M		Class 3R
Power source	Alkaline battery pack standard, rechargeable battery pack optional	Rechargeable and alkaline battery packs standard	
Battery life (alkaline batery)	40 hrs		18 hrs
Dimensions	150 x 180 x 190 mm		
Weight	2.9 kg		

Laser Level LC.2

Product code: LC.2 / LC.2HV

Self-levelling lasers bring unmatched precision to the job site. With electronic self-levelling technology and height of instrument (HI) alert integrated into the LC.2, costly errors are a thing of the past.

AVAILABLE MODELS

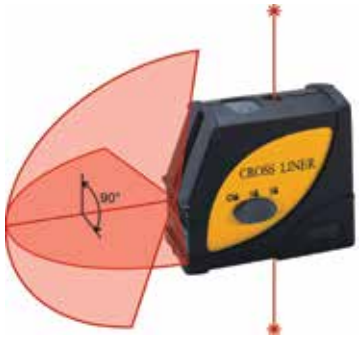
LC.2 - Automatic horizontal, manual and rake (tilt) beams.

LC.2HV - Automatic horizontal, vertical, square and plumb beams. Manual, raked (tilt) and scan mode.

SPECIFICATIONS

	LC.2 / LC.2HV	Remote Control
Operating distance	200 m (655 ft) radius (350 m optional)	30 m
Levelling accuracy	0.010%	N/A
Levelling range	± 8%	N/A
Laser source	Visible laser diode	N/A
Laser class	Class 2M	N/A
Power source	2 x 'D' cell battery	1 x 9 V battery
Battery life	40 hrs (alkaline battery)	N/A
Dimensions (H x W x D)	190 x 180 x 150 mm	100 x 60 x 30 mm
Weight	2.9 kg	N/A

Cross Liner Laser



Product code: LAS.603H

FEATURES

- Automatic levelling via heavy duty compensator
- Laser lines can be locked in place allowing them to be set at any angle.
- Universal mount via strong magnets, 1/4" and 5/8" tripod mounts or velcro strap.
- Outdoor mode allows use with a handheld receiver.
- Applications in carpentry, concreting, electrical, plumbing and many more...

SPECIFICATIONS

Accuracy	± 3 mm @ 10 m
Self-levelling	± 5°
Laser source	635 nm diodes
Laser class	Class 3R
Power supply	3 x AA batteries
Battery life	15 hrs continuous use (2 lines on)
Operating range	30 m indoor (50 m with receiver)
Fan angle	140° vertical and 130° horizontal
Out of level indication	Flashing laser beam and audible alarm
Unit tripod mount	1/4" x 20 camera tripod
Pendulum lock	Protects pendulum when not in use
Dimensions (H x W x D)	110 x 90 x 60 mm
Weight	450 g
Operating temperature	-10°C to +50°C

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Cross Line Laser

Product code: LS.4V4H / LS.4V4H.G

The LS4V4H laser is a true multi line cross laser giving the user 9 separate high powered beams producing a useful and versatile grid formation. The unit can be used for site layout, setting up partitions, tiling, suspended ceilings, or for any application that needs a square, horizontal and vertical line reference.

FEATURES

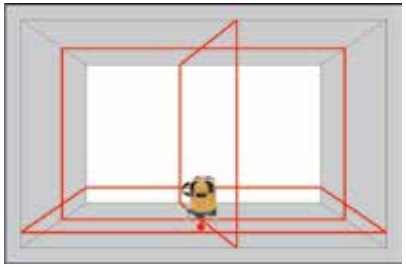
- Indoor or outdoor use
- 9 automatic beams - 4 vertical, 4 horizontal and 1 plumb beam
- Level, vertical, plumb and square
- Adjustable feet
- Fits builders' tripods
- Waterproof
- Robust and accurate electric motor self levelling system

STANDARD KIT

- Laser unit
- Laser glasses
- Hand-held receiver
- Carry case
- Battery charger
- User manual
- Target card

AVAILABLE MODELS

- LS.4V4H - **red beam** cross line laser
- LS.4V4H.G - **green beam** cross line laser



SPECIFICATIONS

Laser unit	**LS.4V4H**	**LS.4V4H.G**
Line accuracy	± 1 mm @ 10 m	
Self-levelling range	± 4°	
Working range	20 m without receiver 50 m with receiver	35 m without receiver 50 m with receiver
Laser source	635 nm laser diode	532 nm laser diode
Output power	< 5mW	
Laser class	Class 2M	
Power	4 AA cell batteries	
Operating time	8 hrs	
Operating temperature	-10° C to 50° C	
Mounting thread	5/8" thread	
Laser receiver		
Detection accuracy	Fine / wide settings	
Display	LED and buzzer	
Power supply	9 V battery	
Outfit	Clamp for laser detector	

XLiner Combo

Product code: XLINER COMBO

Introducing the XLiner Combo, its simplistic design and high powered modules give it an unrivalled position in the market. The level can used in classic cross mode, 5 beam mode or a combination of the two. The device can be mounted on a tripod in such a way that the plumb point will be located on the mounting axis of the level. The level combines the functions of projecting horizontal & vertical planes, plumb lines and setout.

XLiner Pento

Product code: XLINER PENTO

Introducing the Xliner Pento, high-precision (±0.1 mm/m) laser level equipped with six laser emitters, which allows projection of a horizontal line, three vertical planes and a plumb down position. Three vertical planes of the laser level are perpendicular to each other and intersect at the same point, which is zenith.

Due to a wide horizontal line angle, the horizontal plane of the level intersects with all vertical planes and as a result creates four crosses.

The device can be mounted on a 5/8" tripod in such a way that the plumb point will be located on the mounting axis of the level. The level is noted for high accuracy and a wide range of functions.

SPECIFICATIONS

	XLINER COMBO	**XLINER PENTO**
Line accuracy	± 2 mm @ 10 m	± 1 mm @ 10 m
Self-leveling range	± 5°	
Working range	25 m without receiver 50 m with receiver	
Laser source	635 nm laser diode	
Laser safety class	Class 2M	
Power supply	3 AA cell batteries	4 AA cell batteries
Operating temperature	-20° C - 50° C	
Mounting thread	1/4" and 5/8"	5/8"
LASER RECEIVER		
Detection accuracy	Fine / wide settings	
Display	LED and buzzer	
Power supply	9 V battery	

5 Beam Laser

Product code: LAS.5VH.SP

FEATURES

- Automatic self-levelling and plumb assures accuracy and fast setup.
- One person installation of walls, doors, ceiling track and other overhead fixtures without the need for a plumb-bob.
- Fast, one person 90° layout of rooms, walls, tiles, carpet squares and fixtures.
- Dust, water and shock-resistant for improved reliability and minimal repair costs.
- Durable unit with protective rubber over-molding withstands a drop of up to 3 feet (1 m) onto concrete and still maintains consistent accuracy.
- Ships complete in a hard case with mounting accessories and target.

SPECIFICATIONS

Laser beams	5 points
Working range	30 m (100 ft)
Accuracy	± 1.5 mm @ 5 m ± 1/16 in at 17 ft
Self-leveling (vertical)	± 4°
Out-of-level indicator	Yes
Pendulum lock (durability)	Yes
Pendulum damping	Magnetic
Battery type	2 x AA cells
Batery operating time	20 hrs
Dimensions (H x W x D)	90 x 60 x 115 mm
Weight	0.32 kg

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LASER **RECEIVERS**

Laserguide Mini

Product code: R.45/R.45.TC/R.45B/R.45BM

The Laserguide Mini receiver by MCE Lasers is a rugged laser receiver designed to withstand harsh operating environments, providing bright LED indication of the relative height of an excavator blade or arm.

R.45.TC is a world first whereby the receiver will automatically compensate for the error introduced by deviations from the receivers vertical position by adjusting the centre band automatically. Compensation range can be set from 0 to +/- 26 degrees.

FEATURES

- Indicates correct height
- Works with any laser
- Rugged and versatile
- Prevents re-work
- Reduces grade checks
- Simple to install
- Easy to use
- Highly visible LED's
- Automatic compensation induced by vibration
- 220° reception range
- Power on indicator

A.MCE.150
Infra-red remote control for R.45.TC

AVAILABLE MODELS

R.45
Externally powered laser receiver with standard bracket

R.45.TC
Battery powered laser receiver with magnetic bracket and tilt compensation

R.45B
Battery powered laser receiver with standard bracket

R.45BM
Battery powered laser receiver with magnetic bracket

SPECIFICATIONS

	R.45	R.45.TC	R.45B	R.45BM
Receiving area length	75 mm	190 mm	90 mm	90 mm
Tilt compensator	N/A	± 30°	N/A	N/A
Mounting post diameter	40-60 mm	N/A	40-60 mm	N/A
Power supply	12 - 24 V DC	1 "D" cell battery		
Battery life (alkaline)	N/A	45 hrs	100 hrs	
Detected laser	Visible/invisible			
Polarity protected	Yes			
Weight (kg)	1.6	1.8	1.3	1.7
Height (mm)	135	325	250	275
Width (mm)	130	60	130	65
Depth (mm)	170	125	130	125

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Duo Receiver

Product code: R.DUO/R.DUO.360

The unique switchable display and controls allow use of the Duo receiver with any earth-moving machine.

FEATURES

- Rugged construction able to withstand harsh operating environments
- Highly visible LED display of position of laser beam
- Brightness adjustment
- Fast 2.5 hour charging
- User selected resolution (accuracy)
- Saving and restoration of user selected settings
- Automatic compensation for errors caused by vibration
- Battery power level display
- Automatically shuts down to save battery if inactive for a period of time
- Fully waterproof and purged with nitrogen
- Standard 360 degree reception
- Power is 12-24 Volt DC (polarity protected)
- A.RS.033 Standard bracket to suit post 52 mm diameter
- Charger issued as standard

AVAILABLE MODELS

R.DUO
5 channel laser receiver with 360° reception and internal rechargeable batteries

R.DUO.360
5 channel laser receiver with 360° reception and external power supply

SPECIFICATIONS

	R.DUO	R.DUO.360
Detector length	250 mm	
Shock protection	Yes	
Waterproof	Yes	
External power supply	12 or 24 V DC	
Internal battery	Ni-Mh 7.2 V @ 4,500 mAH	N/A
Battery charging time	2.5 hours	N/A
Battery operating time	12 hours (in adverse conditions)	N/A
Automatic power down	30 minutes after the last detected laser beam	
Centre band resolution	Fine, Wide or Normal	
Receiving range	700 m radius (tested with MCE LS.230)	
Mounting post diameter	52 mm	
Size (L x W x D)	417 x 150 x 70 mm	
Weight	3.5 kg (including bracket)	

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LASER **RECEIVERS**

Laserguide 3 Channel

Product code: R.3CHS/R.3CHS.R/R.3CHS.MC

- Simple to use and setup.
- Rugged construction able to withstand harsh operating environments.
- Highly visible LED display of position of laser beam.
- User adjustment of brightness to suit the operating conditions (adjustable with remote).
- Automatic compensation of errors induced by vibration.
- Power supply 12 to 24 V DC (polarity protected) allows use on different machines.
- User selectable accuracy for detecting the laser beam (via remote control).
- Automatic saving & restoration of user selected settings.
- Last position memory, when the laser is not detected.

AVAILABLE MODELS

R.3CHS - stand-alone (visual LED) - manual machine control
R.3CHS.MC - automatic machine control via a control box
R.3CHS.R - radio output for use with a radio remote display

SPECIFICATIONS

Detector length	200 mm
Shock protection	Yes
Waterproof	Yes
External power supply	12-24 V DC (polarity protected)
Centre band resolution	Fine, wide or normal
Receiving range	700 m radius (tested with MCE LS.230)
Mounting post diameter	52 mm
Dimensions (H x W x D)	300 x 150 x 70 mm
Weight	3 kg (including bracket)

Laserguide 5 Channel

Product code: R.5CHP/R.5CHP.MC/R.5CHP.B/R.5CHP.B.MC

- 5 channel receiver - user selectable resolution (accuracy).
- Automatic proportional control of machinery hydraulics.
- Long battery life - lithium-polymer battery for 60 hours of continuous use (R.5CHP.B model).
- 3 wire cord between the receiver and the panel reduces complexity and increases reliability.
- Reliable & robust - rugged construction able to withstand harsh operating conditions.
- Waterproof - sealed and purged with dry nitrogen for work in all weather conditions.

AVAILABLE MODELS

R.5CHP
5 channel receiver for operation with a display panel or as a stand-alone unit, requires external power supply.

R.5CHP.MC
5 channel receiver with machinery control, for operation with a control panel, requires external power supply.

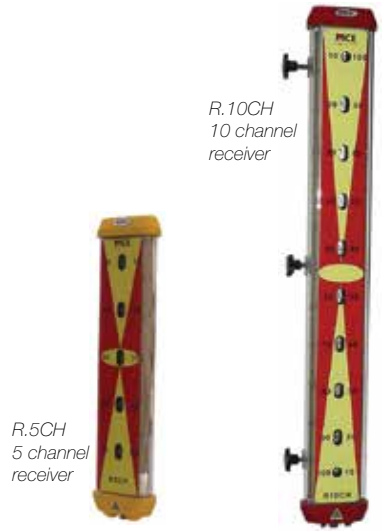
R.5CHP.B
5 channel receiver with internal battery for operation with a display panel or as a stand-alone unit.

R.5CHP.B.MC
5 channel receiver with internal battery and machinery control, for operation with a control panel.

SPECIFICATIONS

	R.5CHP / R.5CHP.MC	R.5CHP.B / R.5CHP.B.MC
Detector length	200 mm	
Shock protection	Yes	
Waterproof	Yes	
Internal power supply	N/A	Li-Polymer battery 3.7 V DC
Battery operating time	N/A	60 hrs
Battery charging time	N/A	9 hrs
External power supply	12-24 V DC	
Centre band resolution	Fine, wide or normal	
Receiving range	700 m radius (tested with MCE LS.230)	
Mounting post diameter	52 mm	
Dimensions (H x W x D)	300 x 150 x 70 mm	
Weight	2.8 kg (inc. bracket)	2.9 kg (inc. bracket)

Laserguide Maxi



MCE Lasers have developed the unique 5 & 10 channel receivers and display panels specifically for large open cut mining applications.

The receiver detects the beam from any laser and greatly improves efficiency and productivity of the mining operation by providing accurate feedback to the machine operator. Accuracy to 50 mm is made possible by the use of high intensity LED clusters.

The receiver is attached to the dipper arm and an optional display panel can be placed in the operators cabin.

FEATURES

- 5 or 10 channel
- 1000 metre range
- Highly visible LED's
- 12 or 24 V DC
- Detects any laser transmitter
- Rugged construction
- UV protected

ACCESSORIES

CB.5CHL - Display panel for the R.5CH receiver

CB.10CH -Display panel for the R.10CH receiver

SPECIFICATIONS

Receivers	**R.5CH**	**R.10CH**
Detector length	490 mm	990 mm
Input voltage	12 or 24 V DC	
Range	1000 m	
Reception	220° or 360°	
Power cord	50 m	
Connectors	Military style	
Dimensions (L x W x D)	655 x 150 x 160 mm	1130 x 150 x 170 mm
Weight	6.25 kg	7.25 kg
Mounting post dia.	40 to 60 mm	
Operating temp.	-20°C to 50°C	
Display panels	**CB.5CHL**	**CB.10CH**
Input voltage	12 or 24 V DC	
Power cord	6 m	
Dimmer switch	Yes	
Connectors	Military style	
On/off switch	Yes	
Dimensions	260 x 84 x 74 mm	350 x 84 x 70 mm
Weight	0.64 kg	0.8 kg
Mounting post dia.	5/8" or velcro	
Operating temp.	-20°C to 50°C	

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Elevation Masts

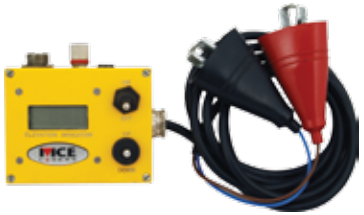
Manual mast ME.15 | *Electric Mast ME.12U* | *Electric Mast ME.14/ME.14HS*

The Elevation Mast is an electrical motor powered mast for smooth movement. Steel framed for strength, the mast is attached directly to scrapper or earthmoving machine. MCE masts are long lasting and reliable. The mast is powered via the Elevation Indicator and can be integrated with a laser receiver control panel thus eliminating unnecesary cables.

The Elevation Indicator is a strong and compact digital instrument capable of measuring the mast height to 1 mm accuracy. This enables you to quickly remove unwanted spoil from the work site to any depth by simply raising the mast, for example 100 mm. When spoil is removed simply revert to original height by lowering the mast as read from the large LCD and proceed to topsoil to original level. Adjustment is easy and at your fingertips.

You can zero the indicator or adjust to any convenient readout height by elevating indicator control panel.

ELEVATION INDICATORS



CB.EI - elevation indicator for use with ME.12U electric mast.

CB.EI.HD - elevation indicator for use with ME.14 electric mast. Features 4 memory settings for easy storing and recalling of 4 different height values. Mast will automatically adjust to the stored height values when selected at the press of a button.

SPECIFICATIONS

Mast	ME.15	ME.12U	ME.14
Type	Manual	Electric	
Size (min)	130 x 130 x 1900 mm	260 x 140 x 1900 mm	
Lift (stroke)	1000 mm	820 mm	900 mm
Weight (including frame)	11 kg	25 kg	30 kg
Post	50 mm diameter		
Power	N/A	12 V DC (24 V DC optional)	
Dust proof	Yes		
Construction	Steel frame, aluminium support		

Elevation indicator	CB.EI	CB.EI.HD
Size (W x H x D) mm	120 x 95 x 58	127 x 117 x 46
Weight	1 kg (with cord)	0.84 kg
Display	LCD	
Resolution	1 mm (0.001 m)	
Power	12 V DC	
Waterproof	Yes	
Construction	Aluminium casing	
Operating temperature	-30° - 65° C	

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Control Panels

A control panel is used to control the machine's hydraulics according to the output from the laser receiver. It also replicates the display from the receiver inside the machine's cabin.

A control panel can be used to either automatically control machine's hydraulics or the user can override and manually control the machines hydraulics via the switches on the control panel.

Accuracy settings and hydraulic response can also be adjusted (dependant upon control panel model).

DUAL CONTROL PANEL CB.2000

- Suits bang bang valves
- 3 accuracy settings
- Economically priced
- Toggle switches
- Dual control panel works with R.3CHS.MC or Blade Leveller

CONTROL PANEL CB.2200

- Suits bang bang valves
- 3 accuracy settings
- Economically priced
- Toggle switches
- Works with R.3CHS.MC
- Can be integrated with elevating mast

CONTROL PANEL CB.D2

- Suits proportional or bang bang valves
- 3 accuracy settings
- Can be integrated with elevating mast
- Large, easy to read LCD display
- Die-cast aluminum casing
- Works with R.5CHP.MC and Slope sensor

DUAL CONTROL PANEL CB.DUO²

- Suits proportional or bang bang valves
- 3 accuracy settings
- Large, easy to read LCD display
- Machined aluminum casing
- Dual control panel works with R.5CHP.MC or a large array of slope and ultra sonic sensors

CONTROL PANEL CB.2001

- Suits bang bang valves
- 3 accuracy settings
- Economically priced
- Toggle switches
- Works with R.3CHS.MC or Blade leveller

Display Panels

A display panel replicates the display from the receiver, inside the machine's cabin. A display panel can be used when there is no direct line of sight to the laser receiver mounted on the machine. The display panel can also be used to change the accuracy settings of the receiver.

DISPLAY PANEL DB.DUO

- Brightness control
- Centre band accuracy selection
- In-cab display via cable
- Toggle switches
- Works with R.3CHS series receivers

DISPLAY PANEL CB.3CH

- Brightness control
- Centre band accuracy selection
- In-cab display via cable
- Push button switches
- Works with R.5CHP and DUO series receivers

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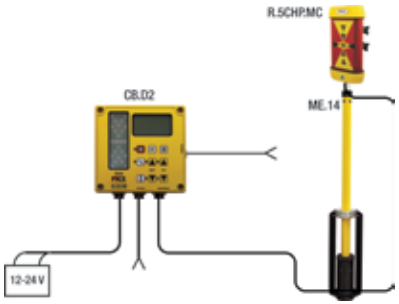
Receiving Systems



Receiving systems from MCE Lasers allow you to maximise the time you spend productively in the cab. By guiding your machinery to an exquisite level of accuracy of depth or elevation, you will optimise machine time. This means greater efficiency, effectiveness and profitability for your business.

You can use MCE Lasers' rugged, highly flexible receiving systems on a wide range of machines. The receivers can be used either for visual display or in conjunction with a control panel for fully automatic blade control.

MCE Lasers' modular design enables us to put together receiving system combinations to suit every machine and application. Our knowledge and leading industry experience also allow us to create custom receiving systems tailored to your specific application.

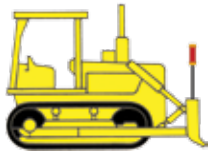
APPLICATIONS

- Land levelling
- Road construction
- Agricultural site preparation
- Airfield construction
- Stadium and sports fields
- Golf courses and tennis courts

MCE Lasers receiving system setup on a scraper

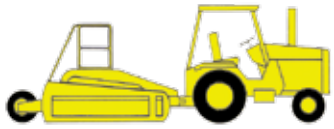
Back Hoes

Excavators

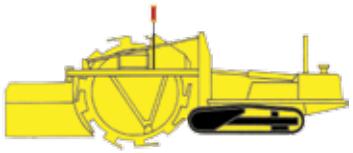


Bulldozers

Graders



Drag Scrapers



Trencher

COMMON VISUAL GUIDANCE RECEIVERS TO SUIT VARIOUS MACHINES

	Product code	Product description	Excavation <10 tonne	Excavation <15 tonne	Excavation <40 tonne	Graders	Dozers	Skid steer	Box blade
RECEIVERS	R.5CHP.B	Laseguide 9 channel receiver with internal battery	O	O	O	S	S	O	S
	R.DUO.B	Duo series receiver with internal battery	O	O	S	O	O	O	O
	R.3CHS	Laserguide 5 channel receiver	O	O	O	O	O	O	O
	R.45.BM	Laserguide mini receiver with magnetic bracket	S	O	O	O	O	S	O
	R.45.TC	Laserguide mini receiver with tilt compensation & magnetic bracket	O	S	O	O	O	O	O

STANDARD RECEIVING SYSTEMS FOR AUTOMATIC MACHINE CONTROL

	Product code	Product description	RS.023	RS.022	RS.021	RS.020	RS.009	RS.007	RS.002U
RECEIVERS	R.5CHP.MC	Laseguide 9 channel receiver for machine control	S	S		S (2pcs)			
	R.DUO.MC	Duo series receiver for machine control	O	O		O (2pcs)			
	R.3CHS.MC	Laseguide 5 channel receiver for machine control			S		S (2pcs)	S	S
CONTROL PANELS	CB.D2	Control panel with electric mast controller for 9 channel receiver	S	S					
	CB.2001	Control panel for 5 channel receiver/blade leveller						S	
	CB.2000	Dual control panel for 5 channel receiver/slope/ sonic sensors			S		S		
	CB.2200	Control panel for 5 channel receiver							S
	CB.DUO2	Dual control panel for 9 channel receiver/slope/ sonic sensors				S			
ELEVATION MAST	ME.12U	Standard electric mast							S
	ME.14	Heavy duty electric mast		S					
	ME.14HS	Heavy duty, high speed electric mast		O					
	ME.15	Manual elevation mast	O		O	O (2pcs)	O (2pcs)	O	
SENSORS	BG.001	Blade leveller for use with CB.2000/CB.2001 control panels			S			O	
	BG1500	Slope sensor for use with CB.DUO2/CB.D2 control panels				O			
	TR.002	Ultrasonic sensor				O			

S = standard; O = optional

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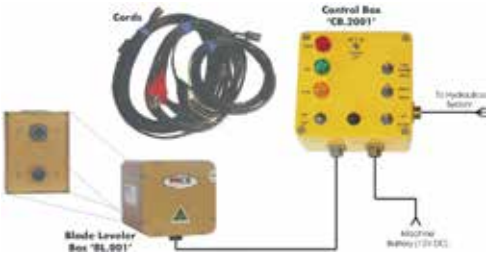
Blade Leveller



Product code: RS.BL

Blade Leveller is an accurate automatic control system for keeping a cutting blade of machine horizontal at all times. You can override the automatic control by switching to manual mode on the control panel.

The control panel also indicates the blade movement required to keep on level, via three bright light indicators.

FEATURES

- Automatic or manual control
- Bright light indicators
- Selectable accuracy

INCLUDES

- Blade leveller box BL.001
- Control box CB.2001
- Power cord A.RS.001
- Receiver cord A.RS.002
- Hydraulic cord A.RS.003
- Carry case A.RS.013

APPLICATIONS

Blade Grader

Product code: BG.004

Where a constant grade of a check bank or level bank is required, the Blade Grader is ideal. The LCD gives you the exact grade your blade is working at. For example, if your road shoulder is at grade 1 in 36, the BG.001 will provide you with grade of 2.7778% displayed on the LCD. The control box can store 4 grade values in memory for quick grade changes. The Blade Grader can be used automatically or manually to control grade of cutting blade via the control box. The control box gives a clear digital readout of the grade of the blade.

INCLUDES

- Grade sender box BG.1500
- Grade control box CB.D2
- Power cord A.RS.001
- Receiver cord A.RS.072
- Hydraulic cord A.RS.073
- Case A.RS.038
- Corded remote control and various length cords available as accessories

SPECIFICATIONS

Blade grader system	
Range	± 30%
Resolution	0.05%
Power supply	12 - 24 V DC
Grade control box (CB.D2)	
Display size	65 x 37 mm graphical LCD
Dimensions (H x W x D)	160 x 160 x 92 mm
Weight	1.88 kg
Grade sender box (BG.1500)	
Dimensions (H x W x D)	124 x 80 x 58 mm
Weight	0.59 kg

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XsiteEASY

Product code: VL.001

XsiteEASY is an inexpensive, easily operated 2D excavation system, which measures the depth, range and inclination of the bucket during operation and facilitates work even in places where the bucket is not visible to the driver, e.g. under water. The system thus accelerates work processes and improves safety on site, as no personnel have to be present in the working range of the machine to monitor work. The system thus accelerates work processes and because there is no need for any other personnel to be near the excavator as it works improves safety on site. XsiteEASY is ideal for varied projects such as for digging trenches, pipelaying, foundations, road works and dredging work. This 2D solution operates with slope sensors with which the position of the bucket can be precisely determined. The highly accurate and robust slope sensors of this 2D system precisely determine the position of the bucket teeth under all situations. With their robust design, all sensors are well suited for use under all rough conditions or even under water.

SYSTEM BENEFITS

- The work gets done more efficiently and quickly as the operator can concentrate on productive work. Less time spent on the contract means cost savings in employee, fuel, and machinery expenses.
- The accurate measurement device enables tighter tolerances. No excess cutting or filling. Material and transportation costs decrease as the use and transportation of extra materials are no longer needed.
- Higher accuracy leads to more uniform work quality throughout the contract. Machine control turns a good machine operator into a great one!
- Improved jobsite safety as workers close to the machinery or in the excavations are no longer needed.
- The system guides the operator in all weather conditions and, therefore, making the work easier especially under poor conditions, such as rain or poor visibility.

1. Control panel
2. 3-axis slope sensor
3. Laser receiver
4. LED display

Excavation depth and distance - you can measure the depth and horizontal distance by resetting the bucket at the desired starting point.

Slope - when measuring the slope, the system indicates the height diference between the bucket and the target surface. The target slope is entered into the system before the work starts.

Underwater excavation - when dredging, seeing the bucket position on the display is a remarkable advantage. The sensors are fully waterproof.

Laser - the laser receiver enables moving the machine at the site without losing the original level. The laser that has been set to a known site level can also act as a reference level.

Bucket tilt angle - with the help of the tilt bucket sensor, you can set the measurement point to the lowest corner of the bucket, and observe the sideways tilt angle on the display.

Height alarm - the alarm thresholds bring added security when, for instance, working under power lines. The system warns the operator if the bucket or boom is raised beyond a set point.

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2D & 3D **SYSTEMS**

XsiteLINK

Product code: VL.002

In addition to numerous 2D functions, XsiteLINK also comes as standard with basic 3D functions. The system's basic functions include the measurement of depth, slope and distance from the excavator of the bucket. The operator can generate a profile directly on the display, consisting of several levels and slopes. The position and status of the bucket are displayed in real-time on the panel. The operator is thus assured of precisely obtaining the desired excavation depth at all times. The system can be upgraded with a laser receiver, an external LED display, a cross-slope sensor on the bucket and a GNSS sensor. Manual site surveys can be dispensed if using RTK GNSS positioning and background maps as the excavator becomes the surveying equipment! Thus time and money are saved through less personnel on site and less man-hours. The 3D version of Link continuously displays height and machine data and simple 3D models are created directly on the screen.

SYSTEM BENEFITS

- When the machine is located with the aid of satellites, there is no need to use a laser to move the machine or set up physical elevation markers for level comparison.
- Improve your work efficiency and finish your contracts faster. Save on labour, fuel, and machinery costs.
- Do the job properly the frst time, and no later corrections are needed. Avoid excess cutting and filling. Lower your material and transportation costs.
- Document the excavation work immediately after the completion of the work phase, before you refill the excavation. Save on surveying costs, and collect exact data with the machine yourself.
- Create a safe working environment. No workers needed around the machinery or in the excavations.

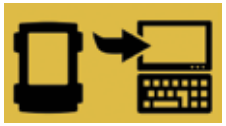
1. Control panel
2. 3-axis gravitational sensors
3. Laser receiver
4. LED display

Single GNSS positioning - satellite positioning enables working without staking-out. Thanks to the positioning provided with a single GNSS antenna, the location of the machine is known at all times, and the direction is set by rotating the machine after it has been moved.

2D drawings - when working with 2D drawings, the display shows the bucket position on top of the two-dimensional design file. At the same time, the system displays the bucket elevation so that the operator can compare it with the target elevation.

Profles - use the handy built-in tool to create various profles, such as ditches and roads. As you create your own 3D models right there in the excavator cabin, you won't have to depend on engineering offices and you can utilise satellite positioning even at small jobsites.

Documentation - collect data regarding your pipeline installations and constructed layers right from your own machine – no separate surveying is required. Documenting is carried out by directing the bucket to the desired point and by saving the coordinates.



Remote support - a wireless internet connection makes it possible to create a remote connection between the machine control system and the service centre. By using this remote function, technical support can provide you with guidance – without having to visit the site.

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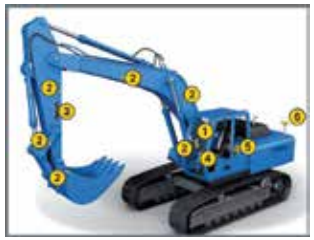
XsitePRO

Product code: VL.003

With the professional XsitePRO system there is no need for time-consuming manual surveying; the operator can see all the position information on the display. This saves time, material and fuel. Work processes are accelerated and quality improved. The resulting acceleration in work processes and quality saves time, material and fuel. Because the system accepts all standard DXF and XML formats the digital terrain models (DTM) can be transferred directly and simply from the office to the excavator. The design data is thus accurately transferred to the ongoing project and with the clear visualisation on the display the operator can easily construct even the most complex landforms. On completion of the project, a report can be transmitted directly to the office via the inbuilt internet connection. If required operation in 2D mode is possible at any stage.

SYSTEM BENEFITS

- The location information of the machine is based on RTK-GNSS positioning, so there is no need for staking out. Working becomes independent and fluent as you don't have to rely on surveyors or stakes – or the lack of them.
- The graphical, three-dimensional design models help the machine operator to complete even the most challenging tasks efortlessly. Work gets more efficient and speedy, which means savings in labour, fuel, and machinery costs.
- Quality improves, and the job is performed properly the first time, with no rework. Material and transportation costs decrease as the use and transportation of extra materials are no longer needed.
- As-built data can be saved by using a bucket as the surveying tool. The completed work gets documented and the documents sent to the office for further processing.
- People working close to the machinery or in the excavations are no longer needed. Jobsite safety will be improved.



1. Control panel
2. 3-axis gravitational sensors
3. Laser receiver
4. LED display
5. Controller
6. GNSS antenna

Dual GNSS positioning: Satellite positioning enables working without staking. With the help of two GNSS antennas, the machine's location and direction are constantly known.

DTMs and road lines: When using a digital terrain model, the operator can see the length profle, cross section, and elevation diference in relation to the target surface on the screen. A project can consist of several design models, and the active model can be changed quickly without entering menus. Most common data formats can be imported without format conversions.

Wireless data transfer: The wireless internet connection makes it easy to transfer data between the jobsite and office. Design models can be sent wirelessly to the machine, and in the same fashion, data collected by the machine can be sent to the office for further handling or documentation purposes.

Remote support: A wireless internet connection makes it possible to create a remote connection between the machine control system and service centre. By using this remote function, technical support can provide you with guidance – without having to visit the site.

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Motorgrader/Dozer System

Product code: GS-506

An investment in profitability.
Hardly any industry is experiencing competitive pressure to such an extent as the construction industry. Any company hoping to maintain or improve its position in the market must improve its profitability. In other words: more efficiency by increasing work speed while at the same time improving quality. For the MOBA GS-506 leveling system, it's all part of a day's construction work. Both graders and dozers can be equipped with grade and slope control. The increased productivity ensures that all levelling is performed faster and more accurately.This is the best way to meet high quality requirements and short deadlines.

Modular layout for customized solutions - The GS-506 is a flexible system that offers the right solution for each application. However different the individual construction machines, jobs, and working methods may be, the modular layout creates a basis for a customized solution. Another advantage is compatibility with many other MOBA sensors. This compatibility gives the GS-506 an advantage over other systems and ensures your investment is protected well into the future. In addition, the system can also be extended to a 3D application.

Control panel - all control information and current work status for the operator is always visible. The operator can also enter corrections, bring up system information, or change central settings.

Controller - it receives and compares set target values with data continuously provided by the sensors. It controls the valves of the corresponding hydraulic cylinder in mere fractions of second.

Connecting box - the connecting box is the connection point for all sensors active in the system. The mainfall sensor is also integrated into the box: It measures the inclination of the grader on the longitudinal axis.

Rotation sensor - the sensor measures the value of the blade rotation. Together with the mainfall sensor, it provides optimum compensation for cross slope.

Cross slope - maintains specified slope values. It records current measurement values for blade slope, vehicle inclination and blade rotation, taking into consideration interfering factors such as acceleration or impacts.

Proportional hydraulic valve - the hydraulic unit controls the cylinder movements based on signals generated by the controller.

Ultrasonic sensor - the accuracy of the MOBA Sonic-Ski ® is currently unmatched on the market. Altogether five sensors for height measurement plus an additional sensor for temperature compensation allow for an accuracy of ± 2 mm over the sampling width of 250 mm.

Laser receiver - the LS-3000 laser receiver is a highly precise sensor for grade measurement. It works with all common rotary laser transmitters. Deviations are recorded with millimeter precision in a reception range of 360°.

3D control GNSS or TPS - this system continuously determines the position of the grader and sends the data to the on board computer. Incoming actual values are compared with set values here and are regulated directly by the GS-506. This makes it possible always to move the machine completely freely on open terrain.

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Paver System

Product code: MOBA-MATIC II

MOBA-matic II – proven benefits with additional convenience
With the second generation of the MOBA-matic handset, operation of the levelling system is even easier than before. The MOBA-matic II combines all the proven benefits of previous MOBA-matic systems with additional visual and simplified operation. The MOBA-matic II integrates the controller and operation panel in a single housing. Multiple additional adjustment options make customising your applications to specific machines easy and straightforward.

BENEFITS OF MOBA-MATIC II:

- 3.5" color display
- Easy to operate – still by means of just four buttons
- Clear indication of all connected sensors
- Clear, visual icon driven instructions
- LED status indicators
- Adaptable to all types of hydraulic systems
- Backlit keypad
- Swift and simple swapping of sensors
- Self explanatory error messages

Typical application for pavers

Sonic-ski plus

- Five sonic contact-free sensors scan the reference surface
- Extremely precise distance measurement by means of averaging
- Ingress protection IP 67

Slope sensor

- Specially designed for high vibration screeds
- Measuring range: ± 20°
- Measuring accuracy: ± 0.1%
- Ingress protection IP 67
- Slope angle display available simultaneously with level information
- Simple and easy to recalibrate

Dual sonic

- Inexpensive alternative for contact-free ground sensing or Big Sonic-Ski applications
- Real-time temperature compensation
- Fixed temperature probe
- Measuring range: 20 - 100 cm
- Ingress protection IP 67

Rotary sensor

- Can be used under all weather conditions
- Operates in stringline and ground sensing modes
- Measuring range: ± 30°
- Measuring accuracy of over ± 0.1°
- Ingress protection IP 67

Wire rope sensor

- Very precise height position measurement for milling applications
- Measuring range: 500 mm
- Measuring accuracy: ± 0.1° (± 0.3 mm)
- Ingress protection IP 54
- The user can replace the steel wire (wearing part)

Laser receiver

- Compatible with all common rotating laser transmitters for machine control
- Digital linear detection of the laser beam
- No mast required for height adjustment
- Receiving range: 290 mm/360°
- Measuring accuracy: ± 1 mm
- Ingress protection IP 67
- Select reference point with a single button press

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60 Series Lasers

MCE 60 Series lasers enable accurate construction of tunnels via various techniques including tunnel boring machines, drill and blast, pipe jack or conventional hand techniques. MCE 60 Series lasers are waterproof and made of rugged anodised aluminium.

Standard 60 Series Laser

Product code: LD.60.B

FEATURES

- Rugged anodised aluminium body
- Internal batteries or external power supply
- Waterproof

APPLICATIONS

- Mining & tunnelling
- Industrial & safety
- Timber & manufacturing industry
- Power boring

OPTIONS

Dummy battery (A.MCE.067) and cap with input connector (A.MCE.066), pictured below, can be used to operate LD.60.B through an external power supply. Optional green beam available.

SPECIFICATIONS

Output power	3 mW
Power supply	4 x 'D' cell batteries or 6 - 12 V DC external power supply
Operating time	300 hrs (with alkaline batteries)
Operating range	300 m
Beam diameter (at exit)	10 mm
Beam diameter (at maximum range)	45 mm
Length	460 mm
Diameter	60 mm
Weight	2.4 kg with batteries 2.1 kg with dummy battery

Intrinsically Safe 60 Series Laser

Product code: LD.60.IS

The MCE LD.60.IS laser allows accurate construction and alignment of tunnels where being driven by tunnel boring machines, drill and blast, pipe jack or conventional hand techniques. MCE LD.60.IS is intrinsically safe and therefore does not require an explosion proof containment when working in gaseous environments such as methane/ air mixtures. The unit is waterproof, rugged and entirely constructed of stainless steel and brass. The laser incorporates diode technology and is powered through 4 'D' cell batteries.

When used with the MCE designed adjustable gimbal, the laser is easy to install on tunnel walls and adjust to target.

APPLCATIONS

- Mining & tunneling
- Industrial
- Safety
- Manufacturing
- Power Boring

OPTIONS

Horizontal gimbal I/S (brass)	A.60.004.IS
Rubber bumpers	A.60.001
Metal carry case	A.60.006
Penta prism	A.MCE.029
External line generator	A.60.009

FEATURES

- Intrinsically Safe
  Explosion-proof containment not required.
  Works in Methane/Air mixtures.
- CERTIFICATE No.
  IECEx SIM 11.0003
- IEC 60079-0:2004 Edition: 4.0
  Electrical apparatus for explosive gas atmospheres;
  Part 0: General requirements
- IEC 60079-11:2006 Edition: 5
  Explosive atmospheres - Part II : Equipment protection by intrinsic safety "i"

SPECIFICATIONS

Output power	3 mW
Power supply	4 x D cell batteries
Operating time	300 hrs
Operating range	300 m
Beam diameter (at exit)	13 mm
Beam Diameter (at maximum range)	45 mm
Length	455 mm
Diameter	60 mm
Weight	3.7 kg with batteries

Fence Pro

Product code: FP550/FP1000

STAY IN LINE FROM THE FIRST POST TO THE LAST

The only laser of its kind delivering fencing contractors a professional and easy to set up alignment tool. The Fence Pro has been designed by fencing contractors to make the installation of long range rural fencing easy.

FEATURES

- Rugged construction able to withstand harsh operating environments
- Easy to set up
- Superior long range of up to 1000 metres
- Can be powered from 12 V DC or 4 'D' size batteries

SPECIFICATIONS

	FP550	FP1000
Power supply	4 x D cell or 12 V DC	
Operating time	250 hrs in adverse conditions	12 hrs in adverse conditions
Operatig range	350 metres with R.LAS19	700 metres with R.LAS19
	550 metres with R.5CHP.B	1000 metres with R.5CHP.B
Shock protection	Yes	
Waterproof	Splashproof	
Size	580 x 60 x 60 mm	
Weight	5.4kg	

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LINE & DOT **LASERS**

LD.60X25

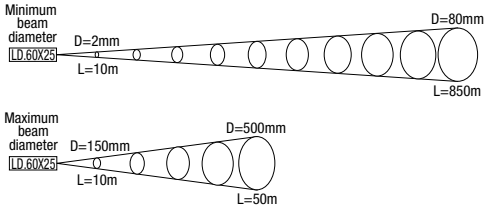
60 Series laser with focusable beam

The LD.60X25 creates an adjustable laser beam that is ideal for alignment over long distances. The LD.60X25 gives you the power to adjust the focus of the beam. Both red and green beams are available to suit your working environment.

AVAILABLE MODELS

LD.60X25
Externally powered laser shown with an optional gimbal bracket.

LD.60X25B
Internal battery, shown with an optional gimbal bracket.



SPECIFICATIONS

Input power	12 V DC (LD.60x25 only)
Power supply	4 x D cell (LD.60x25B only)
Output power	2 to 10 mW
Operating distance	Up to 850 m
Operating time	300 hrs (alkaline batteries)
Dimensions	Length: 605 mm Body diameter: 60 mm Focusing collar: 75 mm
Weight	2.2 kg (laser only)

LD.60X25L

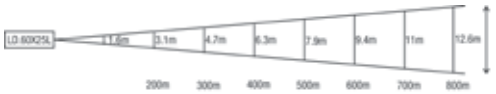
60 Series laser with oscillating beam

The LD.60X25L is a long distance laser used for vertical alignment on distances up to 850 metres. The beam is detected by a laser receiver (Laserguide). It is possible to automatically control the relevant machine by connecting the Laserguide receiver to the server drive.

The collimated beam is optically deflected (at 8 oscillations per second) from the centre, to 1% or 0.9°. As a result the laser produces a line 12.6 metres long at 800 metres. The thickness of this line can be adjusted by a collimating knob, which alters the centre band (or accuracy).

APPLICATIONS

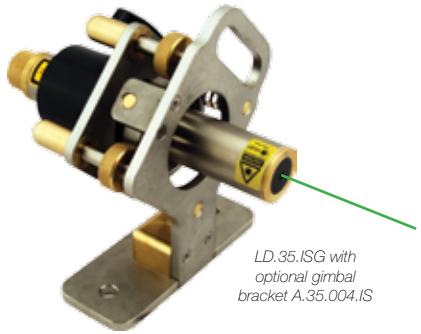
- Laying tracks, pipes or cables
- Machinery control
- Manual or auto steering of vehicles
- Runway-line marking



SPECIFICATIONS

Input power	12 V DC (24 V DC optional)
Output power	2 - 10 mW
Beam diameter	Minimum 80 mm at maximum operating distance
Beam oscillation angle	0.9° or 1% (1m @ 100m)
Operating distance	15 m to 850 m
Dimensions	Length: 610 mm Body diameter: 60 mm Focussing collar: 72 mm
Weight	2.6 kg

25 & 35 Series



LD.35.ISG with optional gimbal bracket A.35.004.IS

Product code: LD.25.IS / LD.35.IS / LD.35.ISG

The LD.25.IS, LD.35.IS and LD.35.ISG lasers enable accurate construction and alignment of tunnels with tunnel boring machines, drill and blast, pipe jack or conventional hand techniques. The units are intrinsically safe and therefore do not require explosion proof containment when working in gaseous environments such as methane/air mixtures. The units are waterproof, rugged and constructed from stainless steel and brass. The units are based on diode technology and powered by two 'AA' cells (LD.25.IS) or two 'C' cells (LD.35.IS & LD.35.ISG).

When used with the MCE designed adjustable gimbal, the lasers are easily installed on tunnel walls and adjusted to a target.

APPLICATIONS

- Mining
- Tunneling
- Industrial
- Safety
- Manufacturing
- Power Boring

OPTIONS

- Horizontal Gimbal (A.35.004.IS)
- Carry case (A.35.006)
- Penta prism (A.MCE.029)

CERTIFICATION

- Intrinsically Safe
  Explosion-proof containment not required.
  Works in Methane/Air mixtures.
  Code: Ex ia I/IIC T3 IP55
  Code: Ex ia I/IIC T4 IP55
- IEC 60079-0 : 2011
  Edition: 6.0
  Electrical apparatus for explosive gas atmospheres
  Part 0: General requirements
- IEC 60079-11 : 2011
  Edition: 6.0
  Explosive atmospheres
  Part 11: Equipment protection by intrinsic safety "i"
- CERTIFICATE No.
  IECEx SIM 13.0004

AVAILABLE MODELS

LD.25.IS
*Intrinsically safe mining laser with **red** beam.*

LD.35.IS
*Intrinsically safe mining laser with **red** beam and extra long battery life*

LD.35.ISG
*Intrinsically safe mining laser with **green** beam.*

SPECIFICATIONS

	LD.25.IS	LD.35.IS	LD.35.ISG
Length	221 mm	230 mm	230 mm
Diameter	25 mm	38 mm	38 mm
Weight	510 gr with batteries	890 gr with batteries	890 gr with batteries
Power supply	2 x 'AA' cell batteries	2 x 'C' cell batteries	2 x 'C' cell batteries
Operating time	50 hrs	200 hrs	60 hrs
Laser Class	2M	2M	2M
Operating range	150 m	150 m	200 m
Beam diameter (at exit)	5 mm	5 mm	5 mm

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LINE & DOT **LASERS**

Vine Aligner

Product code: LD.60.VK

Grape growers recognise that one of the most time consuming tasks they encounter in vine planting is the accurate layout of vine rows.

MCE embodies the accuracy and efficiency of laser technology in the Vine Aligner laser to enable efficient and precisel vine planting by the user.

Using the MCE Lasers Laserguide receiver also allows the user to achieve automatic or manual machinery control.

VINE ALIGNER KIT INCLUDES

- 60 series laser
- Rotating head
- Horizontal gimbal
- Telescope with mount
- 90° optics
- Power cord
- Carry case

SPECIFICATIONS

Input power	4 x D Cell or 12 V DC, 1 A
Output power	2 mW and 5 mW available
Beam diameter at exit	10 mm
Range (radius)	Up to 1 km
Length	580 mm
Body diameter	60 mm
Head diameter	90 mm
Weight	5.4 kg

ML Series Lasers

Industrial alignment lasers
Product code: ML.LD

ML.LD

FEATURES

- Visibility of beam makes alignment fast and accurate
- Low power consumption
- Rugged aluminium housing case
- Comes with an AC/DC converter
- Adjustable power output

APPLICATIONS

The ML laser can be used anywhere where a visual spot maybe needed, from a welding reference point to underground tunnelling and drilling

SPECIFICATIONS

Laser type	635 - 670 nm visible laser diode
Output power	1 mW - 10 mW
Laser class	2A, 3A
Beam size	4 mm x 2 mm @ 1m 10 mm diameter @ 10 m
Input voltage	12 V DC
Input current	40 mA
Electrical connection	Two pin
Dimensions	120 mm x 32 mm

ML.LD25

Compact industrial alignment laser

FEATURES

- Visibility of beam makes for fast and accurate alignment
- Low power consumption
- Waterproof and nitrogen purged
- Adjustable power output
- Rugged stainless steel construction
- Corrosion proof

APPLICATIONS

The ML.LD25 laser can be used anywhere where a visual spot maybe needed, from a welding reference point to underground tunnelling and drilling

SPECIFICATIONS

Laser type	635 - 670 nm visible laser diode
Output power	1 mW - 10 mW
Laser class	2A, 3A
Beam size	4 mm x 2 mm @ 1m 10 mm diameter @ 10 m
Beam visibility	Up to 50 m
Input voltage	12 V DC
Input current	60 mA
Laser type	Visible laser diode
Dimensions	120 mm x 32 mm
Cord length	5 m
Electrical connection	Two-socket connection

ZD.LD Laser

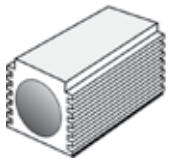
Product code: ZD.LD

The ZD Laser produces a straight line of visible laser light, ideal for many alignment applications.

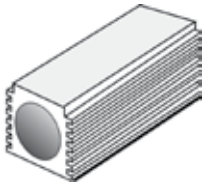
The unit is housed in an anodised aluminium casing which is both light and strong. Fully sealed and nitrogen purged, the laser is 100% waterproof.

A range of brackets and optical accessories are available to suit the laser and MCE Lasers can design or develop a solution tailored to your alignment needs.

OPTIONS



Small bracket
A.ZD.040



Large bracket
A.ZD.120

SPECIFICATIONS

Laser type	670, 650, 635 or 532 nm visible laser diode
Output power	1 mW - 5 mW
Laser class	2A, 3A
Beam diameter	10 mm @ 10 m
Beam visibility	Up to 100 m
Input voltage	12 V DC
Input current	60 mA
Length	210 mm
Diameter	50 mm

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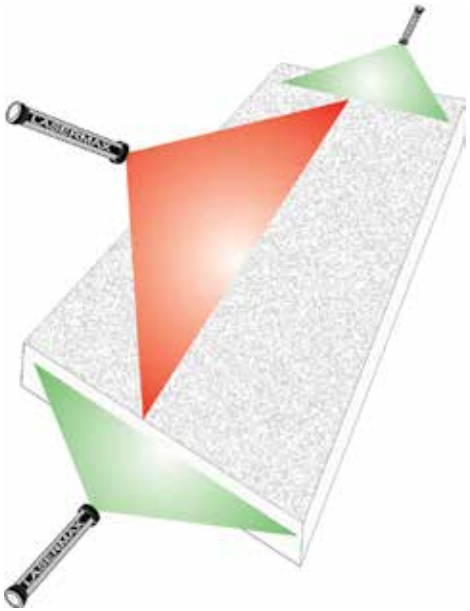
Lasermax



Product codes: ZD.LD.LG/ML.LD.LG

Whether you are in the timber, metal, textile or printing industry, you can increase your productivity by using accurate laser generated guidelines. Using a Lasermax line laser can save you thousands of dollars each month by minimising waste and saving time.

The strong bright beam of light produced by a MCE Lasermax is ideal for use in even the harshest industrial environments. Initial set-up is quick and precise and the unit remains virtually maintenance free for years.

Lasermax is available in two models: the ZD Lasermax and the ML Lasermax. Both are available in a range of configurations to suit your application. A green beam is optional for better visibility especially when reflected on dark surfaces. Contact MCE for an analysis of which Lasermax fulfils your requirements.

The casing is extruded aluminium, fully sealed and nitrogen purged. Accurate alignment of the laser with the housing makes the laser ideal for precision applications. Lasermax is powered by a 12 V DC external power source (standard) but can be powered by other voltages if required.

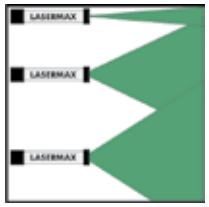
OPTIONS

The Lasermax lasers can be fully customised to suit your particular application. Some of the available options are shown here:

Power input	24 V DC, 110 or 240 V AC
Power output	> 10 mW
Beam angle	4°, 45° or 60°
Protection bumpers	Rubber bumpers (ZD only)
Line type	Cross, multiple lines etc.
Green beam	5 to 10 mW

OPTIONS

Lasermax is available in 4°, 45° or 60° fan angle. Available with ZD and ML Lasermax.

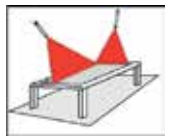


LG 180 produces a line perpendicular to the housing. Available with ZD and ML Lasermax.

LG 90 produces a line parallel to the housing. Available with ZD Lasermax.

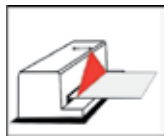
LG 90T produces a line at 90° to the housing. Available with ZD Lasermax.

APPLICATIONS



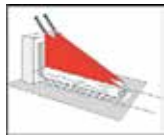
Textiles

Paper



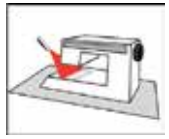
Metals

Timber

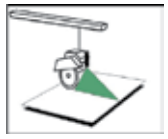


Frame saw

Stone



Sewing



Panel saw

2D shapes

SPECIFICATIONS

	ZD.LD.LG	ML.LD.LG
Laser source	Visible laser diode 532, 635 or 650 nm	
Power output	3 mW to 10 mW	1 mW to 5 mW
Input voltage	12 V DC	
Electrical connection	2 pin	
Beam angle	60°	
Length	220 mm	125 mm
Diameter	50 mm	32 mm
Mounting bracket	Included	
Mounting thread size	5/8" thread	

SB & DB Series Lasers

Single and dual beam alignment lasers

The SB (Single Beam) Lasers from MCE Lasers solve many alignment problems throughout industry including industrial machine control, wheel alignment and manufacturing process control. The Single Beam (SB Series) lasers produce a visible red beam at one end of the casing and are available in four models.

Dual Beam (DB Series) lasers have the same properties as SB Series lasers but with beams at each end of the casing that are in line with each other. The Dual Beam lasers are available in five models, and a clamping system has been developed to suit the DB.200 and the DB.400 laser.

Casings for the SB and DB lasers are machined for accurate mounting to provide suitable protection for precision alignment instruments.

AVAILABLE MODELS

SB Series (single beam)

SB.111 SB.300 SB.400 SB.500

DB Series (dual beam)

DB.200 DB.300 DB.400 DB.500

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ACCESSORIES

DB.111 with Tribach adapter (A.TR.001)

DB.200 with clamp (A.DB.001)

SPECIFICATIONS

Specifications common to all SB & DB series lasers	
Laser type	Visible laser diode
Power output	3 mW nominal
Beam diameter	3 mm at exit
Wavelength	635 - 650 nm

Model	SB.111	SB.300	SB.400	SB.500
Input voltage	3 x 1.5 V LR44 cells	4 x 1.5 V N cells	3 x 1.5 V AA cells	3 x 1.5 V AAA cells
Operating time	0.5 hrs	6 hrs	30 hrs	15 hrs
Main body	Aluminium			
Casing size	90 x 20 mm	120 x 20 mm	172 x 25/32 mm	145 x 20 mm
Weight (with batt.)	66 gr	100 gr	228 gr	125 gr
Clamp	N/A	N/A	Supplied	N/A

Model	DB.111	DB.300	DB.400	DB.500
Input voltage	3 x 1.5 V LR44 cells	4 x 1.5 V N cells	3 x 1.5 V AA cells	3 x 1.5 V AAA cells
Operating time	0.5 hrs	6 hrs	30 hrs	15 hrs
Main body	Aluminium			
Casing size	111 x 20 mm	207x 20 mm	291 x 25/32 mm	262 x 20 mm
Weight (with batt.)	90 gr	172 gr	310 gr	218 gr
Clamp	N/A	N/A	Supplied	N/A

Model	DB.200
Input voltage	12 to 24 V DC
Cord	Cord with switch (A.DB.002)
Main body	Stainless steel
Casing size	300 x 25/35 mm
Weight (with batteries)	340 grams
Clamp	Supplied

Laser Fence

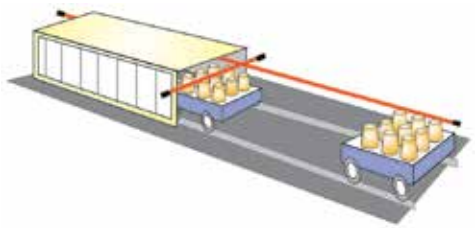
Product code: LR.100/LR.200

This system sets up an electronic fence or trip wire. The system can be set up over long distances and in any configuration you require.

The receiver detects if the laser beam has been broken and is capable of a range of responses such as switching off power, activating an alarm, operating a counter, etc. The Electronic Fence System is ideal for security and monitoring applications.

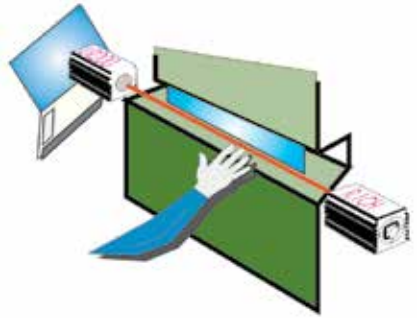
APPLICATIONS

- MONITORING - The MCE Laser Fence is not affected by heat and is ideal for hot conveyor monitoring.



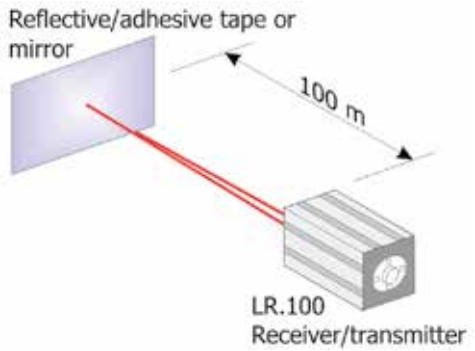
- POSITIONING - The MCE Laser Fence saves you time and money loading and unloading containers.

- SAFETY - The MCE Laser Fence can protect workers from presses, guillotines, and other hazardous areas.

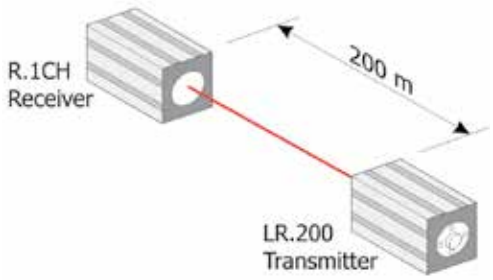


OPTIONS

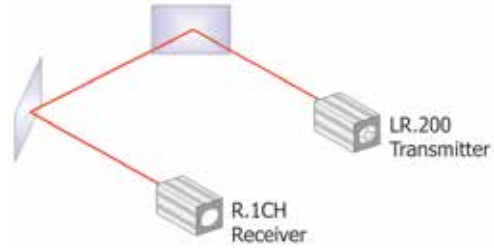
A single combined laser and receiver system (LR.100) enables an electronic fence to be set up over a distance of up to 100 metres (400m optional). The unit is housed in a stainless steel casing and aluminium holding bracket.



A larger system with a range of up to 200 metres (800m optional), uses a separate diode laser transmitter (LR.200) and a one channel receiver (R.1CH). Both units are housed in a stainless steel casing and aluminium holding bracket.



Using special mirrors, complex monitoring arrangements can be set up.



SPECIFICATIONS

	LR.100	LR.200	R.1CH
Length	133 mm + 7 mm connector		
Width	80 mm		
Height	80 mm + mounting screws		
Weight	1110 gr	1090 gr	1130 gr
Power output	3 mW	3 mW	N/A
Input power	12 V DC		
Connection type	10 pin military type		
Beam diameter (at exit)	5 mm	5 mm	N/A
Relay switch contact rating (for inductive load)	1 A @ 30 V DC	N/A	1 A @ 30 V DC

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Slope Indicator

Product code: PI.000

The Slope Indicator consists of a sensing unit with two electronic slope sensors perpendicular to each other. Bright LED indicators give an instant indication of deviation from true level. An adjustable dial gives an accuracy range to suit your requirements.

APPLICATIONS

- Shaft excavation
- Elevators
- Boat stability
- Mine drilling rigs
- Lift or crane safety
- Augers

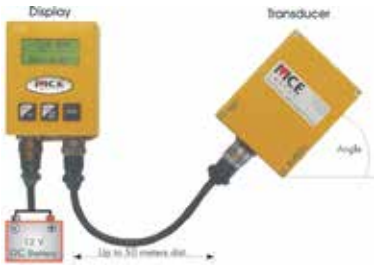
AVAILABLE MODELS

- PI.000 - Slope sensing and display in a single unit.
- PI.000.SD - Separate sensing and display units connected via a cable of up to 50 metres in length.
- PI.000.SDR - Separate sensing and display units communicating via radio signal (wireless).

SPECIFICATIONS

Power supply	Internal rechargeable battery or AC/DC converter (supplied)
Operating time	45 hrs
Size	102 x 102 x 130 mm
Weight	1.83 kg
Waterproof	Yes
Body	Aluminium
Working temperatures	-20°C to 65°C
Indicators	Bright red LED's (centre LED is green)
Warranty	12 months

Inclinometer



Product code: I.001

Capable of measuring the angular position of an instrument up to a fine resolution of 0.01 of a degree.

FEATURES

- Accurate (0.01 resolution)
- Simple to use
- Rugged die cast aluminium construction
- User selectable display (degree/percentage)
- 50 m maximum cord length
- ± 60° single axis measurement
- Offset display capable (measure the angle from any datum)
- Easily mounted
- Waterproof

DISPLAY OPTIONS

Degree

Percentage

SPECIFICATIONS

Measuring range	± 60°
Accuracy (within ±45° range)	0.01°
Operating temperature	-15° to 40°
Voltage supply	12-24 V DC
Maximum operating distance	50 m
Transducer unit weight	485 gr
Transducer unit size	120 x 58 x 95 mm
Display unit weight	385 gr
Display unit size	120 x 95 x 35 mm

Nivcomp

Product code: NC.000

Nivcomp is a modern maintenance-free application of the traditional hose leveling instrument, where the inspection glass is replaced by a sensor module with direct height indication. Precision with easy operation.

The Nivcomp allows you to transfer precise levels in adjacent rooms, up and down different floor levels, behind walls or around corners - with no line of sight required - within a 24 metre straight-line radius of the case.

The Nivcomp now comes equipped with a Micro SD card reader allowing you to transfer stored value from the unit to a PC quickly and easily.

APPLICATIONS

- Building contractors
- Floor work
- Dry lining
- Timber construction
- Site managers, architects...
- Terracing and window manufacturing
- Paving and road construction

APPLICATIONS

ADVANTAGES

For the application at a construction site, Nivcomp offers a range of advantages over traditional levelling.

- Measurements under all weather conditions, on difficult spots, directly on plains and around corners without visibility
- Very easy handling by one person (no installation, no tripod)
- Store measured values and transfer to PC via a Micro SD card for analysis and storage.
- Suitable for unskilled workers after a short instruction
- Exact measurements irrespective of distance within 48 metres
- Easy to read display, even in bright sunlight
- Time saving technology suited to changing positions as work progresses and for checking measurements
- Easy and quick level check during works (within a few seconds) with direct indication of deviations

SPECIFICATIONS

Accuracy (inside, typical)	± 2 mm at a maximum measuring distance of 48 m
Vertical outreach	± 2.5 m (± 4.0 m)
Altitude indication	mm / inch
Temperature range of application	0 - 35 °C
Battery handheld device	1 x AA (alkaline) 1.5 V
Energy requirement	10 mW
Operating time	> 250 hrs
Dimensions	450 x 420 x 150 mm
Weight	5.5 kg
Certificates	CE, FCC, conforming with RoHS Low-emission in accordance with the EMC-product-standards

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Disto Distance Meters

Disto - the innovative hand-held laser meter for fast and easy distance measurements of length, squares and volumes with the press of a button. Save time and money and emphasise your competence with modern measuring methods.

Disto D3ABT

Now the Leica DISTO™ D3a is also available with BLUETOOTH®. Due to this technology, measurement results can be wirelessly and accurately transferred to Pocket PCs and PCs. Furthermore, the Leica DISTO™ D3a BT is equipped with "Smart Horizontal Mode™, tilt sensor, calculation possibilities for rectangular and triangular areas, volumes, room dimensions and various types of Pythagoras functions.

Disto D210

The compact and handy entry-level model has many interesting functions and is still simple to use. Addition and subtraction, area and volume calculations for rapid and reliable site measurement. The last 10 results are stored.

Disto D510

The new Leica DISTO™ D510 stands for easy and effortless outdoor distance measurement. The unique combination of digital Pointfinder and 360° tilt sensor allows measurements which are not possible with conventional distance meters. In addition, with Bluetooth® Smart and attractive free apps, you are prepared for the future.

Disto X310

The new Leica DISTO™ X310 is the only laser distance meter to be dust-tight and protected against water jets – to IP 65. In addition, it passes drop tests of up to 2 m height. Thanks to the integrated tilt sensor, it can take indirect distance and height measurements absolutely precisely.

Disto D810 Touch

World's first: The Leica DISTO™ D810 touch is the first laser distance meter world-wide with a touch screen, allowing for quick and intuitive operation. Another revolutionary feature allows for measurements with pictures. Due to the integrated camera it is also possible to take pictures and download them with the USB-interface to a computer. The high functionality is perfectly completed by the smart free app "Leica DISTO™ sketch".

Functions	D210	X310	D3ABT	D510	D810 Touch
Distance measurement	up to 80 m	up to 120 m	up to 100 m	up to 200 m	up to 200 m
Minimum / maximum measurements	•	•	•	•	•
Area / volume measurements	•	•	•	•	•
Triangle / room angle function		•	•	•	•
Painter function	•	•	•	•	•
Trapezium function				•	•
Pythagoras functions	•	•	•	•	•
Tilt measurement		360°	± 45°	360°	360°
Smart Horizontal Mode™		•	•	•	•
Sloped object measurement				•	•
Height tracking		•		•	•
Height profile measurements				•	•
Stake-out function	a/a	a/b	a/b	a/b	a/b
Subtraction / addition	•	•	•	•	•
Pointfinder with 4x zoom				•	•
Camera function					•
Measure with the picture					•
Timer		•	•	•	•
Personalised favourites				•	•
Touch screen					•
Compass					•
Bluetooth®			Bluetooth®	Bluetooth® SMART	Bluetooth® SMART
Specifications	**D210**	**X310**	**D3ABT**	**D510**	**D810 Touch**
Typical measuring accuracy	± 1.0 mm	± 1.0 mm	± 1.0 mm	± 1.0 mm	± 1.0 mm
Range	0.05 – 80 m	0.05 – 120 m	0.05 – 100 m	0.05 – 200 m	0.05 – 200 m
Measuring units	m, ft, in	m, ft, in	m, ft, in	m, ft, in	m, ft, in
Power Range Technology™	•	•	•	•	•
Distance in metres Diameter of the laser dot	10, 50, 100 m 6, 30, 60 mm	10, 50, 100 m 6, 30, 60 mm	10, 50, 100 m 6, 30, 60 mm	10, 50, 100 m 6, 30, 60 mm	10, 50, 100 m 6, 30, 60 mm
Tilt sensor measuring range Accuracy to the laser beam Accuracy to the housing	- - -	360° ±0.2° ±0.2°	45° ±0.3° ±0.3°	360° ±0.2° ±0.2°	360° -0.1°/+0.2° ±0.1°
Tilt sensor units	-	0.0°, 0.0%	0.0°, 0.0%	0.0°, 0.0% mm/m, in/ft	0.0°, 0.0% mm/m, in/ft
Digital viewfinder with 4X zoom	-	-	-	•	•
Overview camera	-	-	-	-	•
Photograph file format	-	-	-	-	.jpg
Recall last values	10	20	20	30	30
Time delay release (timer)	-	•	•	•	•
Display illumination	•	•	•	•	•
Free software for Windows	-	-	•	-	•
Free App	-	-	Android	iOS/Android	iOS/Android
Data interface	-	-	Bluetooth® 2.1	Bluetooth® SMART	Bluetooth® SMART
Measurements per set of batteries	up to 5,000	up to 5,000	up to 5,000	up to 5,000	up to 4,000
Multifunctional end piece	•	•	•	•	•
Tripod thread	-	•	•	•	•
Batteries	2 x 1.5 V AAA	2 x 1.5 V AAA	2 x 1.5 V AAA	2 x 1.5 V AA	Li-ion rechargeable
Battery charging time	-	-	-	-	4 hrs
Protection class	IP54	IP65	IP54	IP65	IP54
Dimensions	114 x 50 x 27 mm	122 x 55 x 31 mm	127 x 49 x 27 mm	143 x 58 x 29 mm	164 x 61 x 31 mm
Weight with batteries	126 g	155 g	150 g	198 g	238 g

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Automatic Levels

Product code: DL.027 / DL.028

FEATURES

- Reliable magnetic damping compensator ensures stability, even under vibration and shock
- Newly designed sturdy and durable housing
- Sealed structure for use in all weather conditions
- Fits flat and dome head tripods

SPECIFICATIONS

	DL.027	DL.028
Magnification	24X	32X
Standard deviation for 1 km	2.0 mm	1.0 mm
Image	Erect	
Objective apperture	34 mm	38 mm
Field of view	1° 20'	
Minimum focus	0.5 m	
Multiplication constant	100	
Additive constant	0	
Compensator range	±15'	
Setting accuracy	±0.6"	±0.3"
Sensitivity of bubble	8'/2 mm	
Horizontal circle reading	360° in 1° increments	
Weight	1.85 kg	
Tripod mounting hole	M16 or 5/8"	

Digital Theodolite

Product code: THEO.KD02 / THEO.KD02LASER

FEATURES

- Easy to operate
- Optical plummet or laser plummet
- Two clear LCD displays
- Rechargeable battery
- Horizontal angle can be set to zero from any point
- 2" accuracy

ACCESSORIES

- Tripods
- Tapes
- Level books
- Staffs

INCLUDED

- Tool kit
- Carry case
- Plumb bob
- AC/DC charger
- Operator's manual
- 12 months warranty
- Rechargeable battery pack

Digital Theodolite RL

Product code: THEO.KD02.RL

FEATURES

- Easy to operate
- Optical plummet
- Two clear LCD displays
- Rechargeable and alkaline battery packs
- Horizontal angle can be set to zero from any point
- 2" accuracy
- High power rotating laser beam to use with receiver
- Long range operating distance
- Ideal for vineyard and rural fencing contractors

INCLUDED

- Tool kit
- Carry case
- Plumb bob
- AC/DC charger
- Operator's manual
- 12 months warranty
- Rechargeable and alkaline battery packs

ACCESSORIES

- Tripods
- Tapes
- Level books
- Staffs
- Millimeter receiver
- Machine mounted receiver

R.LAS.RH.HD - Heavy duty laser receiver measures and displays the distance between the laser beam's hitting point and the marking notch. Upon power on the device automatically performs a self-calibration procedure, guaranteeing consistent accuracy.

SPECIFICATIONS

	THEO.KD02 / THEO.KD02LASER	THEO.KD02.RL
Length	155 mm	
Objective aperture	45 mm	
Magnification	30 X	
Field of view	1°30'	
Resolving power	3.6"	
Shortest focus	1.3 m	
Accuracy	2"	
Display panel	2 x LCD	
Optical plummet	4 X	
Plate vial	30" / 2 mm	
Circular vial	8' / 2 mm	
Power supply	Ni-Mh rechargeable batteries	Ni-Mh rechargeable or alkaline batteries
Operating time	15 hrs	
Data output interface	RS.232C	
Weight	4.8 kg	
Laser operating distance	N/A	450 m radius

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ACCESSORIES

Tripods

Flat top tripod heads

All universal tripods are flat top types for all-purpose use. Designed for all instruments such as automatic levels, laser levels, theodolites and ceiling lasers. Built for rugged conditions and stability.

Standard wooden tripod
A.MCE.103

Heavy duty wooden tripod
A.MCE.026

Standard aluminium tripod
A.MCE.074

Aluminium domed head tripod
A.MCE.113

Telescopic mechanism

The manually operated cranking or telescopic mechanism allows the mounted instrument to be adjusted precisely to the required height. It can also be secured with a locking nut if required.

Aluminium telescopic tripod heavy duty
A.MCE.158

Large aluminium telescopic tripod with swivel top
A.MCE.120

Aluminium telescopic indoor/outdoor tripod
A.MCE.136

SPECIFICATIONS

	A.MCE.103	A.MCE.026	A.MCE.074 A.MCE.113
Structure	Wood / fibreglass	High density wood	Aluminium
Minimum height	103 cm		101 cm
Maximum height	166 cm		165 cm
Weight	6.0 kg	5.5 kg	3.6 kg
Clamping system	Wing nut		Quick clamp
Fixed/ swivel top	Fixed		

	A.MCE.158	A.MCE.136	A.MCE.120
Structure	Aluminium		
Minimum height	135 cm	69 cm	205 cm
Maximum height	300 cm	190 cm	450 cm
Weight	5.5 kg	1.8 kg	15 kg
Clamping system	Wing nut	Quick clamp	Wing nut
Telescopic feature	35 cm	30 cm	55 cm
Fixed/ swivel top	Fixed	Swivel	

Staffs

3 metre staff
A.MCE.023

5 metre staff
A.MCE.019

Wall Brackets

Standard Wall Bracket

Product code: A.MCE.100

FEATURES:

- Quick clamp wall grips
- Adjustable mounting knob to fit lasers up to 240mm diameter

Heavy Duty Wall Bracket

Product code: A.MCE.043

FEATURES:

- Heavy duty wall bracket
- Quick clamp wall grips
- Fits most lasers up to 190mm diameter

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